REMARKS

Claims 1-32, 38, 39, and 41-45 are pending. Claims 1, 2, 4-10, 12-18, 20-26, 28-32, 38-39, and 45 are rejected under 35 U.S.C. § 102(b) as being anticipated by Yanaka, et al., U.S. Patent No. 6,467,034 (hereinafter "Yanaka"). Claims 3, 11, 19, and 27 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Yanaka in view of U.S. Patent Publication No. 2002/0143999 to Yamagami (hereinafter "Yamagami"). Claims 41-43 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Yanaka in view of the IBM Global Services article entitled "Leveraging New Storage Technology for A Competitive Advantage" (hereinafter "IBM"). Claim 44 is rejected under 35 U.S.C. § 103(a) as being unpatentable over Yanaka in view of Applicant's admitted prior art (hereinafter "AAPA").

Claims 1, 9, 17, 25, and 38 have been amended to more particularly point out the features of the present invention. Claims 33-37 and 40-45 have been canceled. The amendments are fully supported by the specification, drawings, and claims. No additional claims have been cancelled. No new claims have been added. No new matter has been added.

REJECTIONS UNDER 35 U.S.C. §102(b)

The Office Action rejected Claims 1, 2, 4-10, 12-18, 20-26, 28-32, 38-39, and 45 under 35 U.S.C. §102(b) as being anticipated by Yanaka. The Applicants respectfully traverse this rejection.

"Anticipation under 35 U.S.C. §102 requires the disclosure in a single piece of prior art of each and every limitation of a claimed invention. …Whether such art is anticipating is a question of fact." *Apple Computer, Inc. v. Articulate Systems, Inc.* 234 F.3d 14, 20, 57 USPQ2d 1057, 1061 (Fed. Cir. 2000). It is well settled that under 35 U.S.C. §102 "an invention is anticipated if . . . all the claim limitations [are] shown in a single art prior art reference. Every element of the claimed invention must be literally present, arranged as in the claim. The identical invention must be shown in as complete detail as is contained in the patent claim." *Richardson v. Suzuki*

Motor Co., Ltd., 9 U.S.P.Q.2d 1913, 1920 (Fed. Cir. 1989). Only if each limitation is literally disclosed by the prior art reference is the claim anticipated.

With regard to Claim 1, the Office Action states that Yanaka discloses: "compar[ing] one or more attributes of each available copy function to corresponding attributes of a predefined copy policy" stating that "the write activity detector monitors the write requests and identifies if the present mode (i.e. synchronous, semi-synchronous or adaptive – the three predefined copy policies) is appropriate for the data transfer" and cites column 7, lines 20-32 of Yanaka as evidence. Office Action at p.6. However, the teachings of Yanaka are significantly different than the subject matter claimed in the present invention. Yanaka is directed to monitoring the ongoing status of a copy operation and adjusting copy modes according to the ongoing performance and reliability of the system based on a number of commands waiting to be processed. See col. 9:9-35. Thus, no matter what type of data or application is being used, Yanaka teaches adjusting the copy mode based on system performance and wait times.

Conversely, the present application is directed to assigning a copy policy to a particular data set (e.g. data associated with a particular application), and then comparing the copy policy attributes assigned to the data to the attributes of various available copy functions to determine which copy function most closely satisfies the requirements assigned to the data. This is a fundamentally different idea than monitoring a number of commands waiting to be processed and adjusting the copy mode accordingly. The present invention allows for a particular set of data to, for example, be ensured greater reliability, while another set of data may require higher performance. Thus, the copy policy is associated with the requirements of the data to be copied, rather than the ongoing performance of the system.

In order to make this distinction clearer, Applicants have amended Claim 1 to recite "comparing one or more copy function attributes of each available copy function to corresponding copy policy attributes of the predefined copy policy assigned to the data to be copied." Applicants submit that such an amendment further distinguishes Claim 1 from Yanaka, because Yanaka fails to teach a copy policy that is assigned to the data.

Yanaka teaches that the write activity detector "monitors **activity** of a command received by the host controller A121, and when it recognizes that the activity has become larger that the range of an activity estimated in an operation mode at that point in time, it issues a signal to change over the mode to a mode making it possible to perform a data processing at a higher speed through the host controller A121." Yanaka at col. 7, ll. 25-32. Applicants maintain the assertion that monitoring **activity** is not the same as comparing **attributes** of a copy policy **assigned to the data** with attributes of a copy function that include predefined values to determine which copy function should be used for the data. Activity relates to execution speed of a data copy request and amount of delay of unexecuted requests. Further, Applicants submit that Yanaka appears to be silent with regard to a predefined copy policy that includes copy policy attributes that correspond to predefined copy function attributes.

This concept is made clear as the write activity detector is further defined in Yanaka in column 9, lines 8-67. Yanaka teaches using predefined queue trigger points to change from one predefined copy mode to another. *Id.* at col. 9, ll. 8-67. Yanaka does not compare attributes with attributes, but instead compares performance metrics to predefined limits to shift from one copy mode to another. Even if a predefined limit of Yanaka is incorrectly assumed to be a predefined copy policy attribute, it is not compared to an attribute of a copy function comprising a predefined value, but instead is compared to performance metrics measured within a processor or related hardware.

The invention of amended Claim 1 recites that attributes of a copy function are compared to corresponding attributes in a predefined copy policy **assigned to the data**. This is a comparison of an attribute with a similar attribute, not a performance metric compared to a limit. The Applicants respectfully assert that Yanaka does not anticipate amended Claim 1 because Yanaka does not teach, disclose, or suggest comparing an attribute of a copy function with a predefined copy policy attribute.

The Office Action also states that Yanaka discloses "a selection module configured to automatically select a copy function that satisfies the predefined copy policy based on the comparison of the copy function attributes to the corresponding attribute objectives of the copy

policy" because it discloses that "the write activity issues a command to change the remote copy mode to another predefined mode that is most appropriate for the transfer" and cites column 7, lines 25-36 and column 5, line 71 through column 6, line 11 of Yanaka as evidence. Office Action at p. 6.

However, Applicants respectfully submit that Yanaka fails to teach automatically selecting a copy function that satisfies a predefined copy policy **based on a comparison of attributes** as now recited in Claim 1. Applicants submit that issuing a command to change a copy mode based on performance metrics (e.g. command queue threshold) does not anticipate comparing copy policy attributes with function attributes. A "queue state of commands waiting to be processed" as taught at column 9, line 16 is neither a copy policy attribute nor a function attribute. Rather, it is a system performance attribute.

Thus, Applicants respectfully assert that Yanaka fails to teach, disclose, or suggest all of the limitations of amended Claim 1 as required under § 1012. Therefore, Applicants submit that amended Claim 1 is in condition for immediate allowance.

The Applicants respectfully assert that Claims 9, 17, 25, and 38 as amended are similar in scope to Claim 1 and that the arguments presented above for Claim 1 are equally applicable and therefore Claims 9, 17, 25, and 38 are allowable.

In addition, Applicants assert that Claims 2, 4-8, 10, 12-16, 18, 20-24, 26, 28-32, and 39 are allowable because they depend from allowable claims.

Furthermore, in the interest of expediting prosecution, Applicants have further amended Claim 38 to incorporate the limitations previously recited in Claims 41-45. Specifically, Claim 38 has been amended to recite:

"Comparing one or more copy function attributes of each available copy function to corresponding copy policy attributes of the predefined copy policy assigned to the data, wherein the copy policy comprises a set of copy policy attributes that correspond to the copy function attributes of each copy function, wherein the copy function attributes comprise predefined values that indicate functionality characteristics of the corresponding copy function, wherein the predefined copy policy attributes within the predefined copy policy comprise a recovery point

objective ("RPO"), a recovery time objective ("RTO"), a distance to a secondary site where the secondary storage device is stored, a consistency, and an application impact, wherein an RPO comprises an amount of data lost over a period of time, wherein an RTO comprises an amount of time to recover data to a usable condition, wherein a consistency comprises a determination of dependency on other stored data, wherein an application impact comprises a performance impact caused by a copy function to the application, the performance impact measured in a unit of time."

Claims 41-44 stand rejected under 35 U.S.C. § 103. Specifically, Claims 41-43 are rejected as being unpatentable over Yanaka in view of the IBM Global Services article entitled "Leveraging New Storage Technology for A Competitive Advantage" (hereinafter "IBM"). Claim 44 is rejected as being unpatentable over Yanaka in view of Applicant's admitted prior art (hereinafter "AAPA"). Applicants submit that the rejection of Claims 41-44 as described in the Office Action ignores the context of Claims 41-44 and fails to treat the claims as a whole. For example, IBM teaches the general ideas of the importance of data storage and how long data may not be available if down. And the AAPA does mention the idea that data recovery requires an understanding of data dependency. However, these general ideas do not teach or suggest the specific limitations recited in Claims 41-44 wherein a predefined copy policy includes a recovery point objective attribute, a recovery time objective attribute, a distance to a secondary site attribute, and a consistency attribute, where the predefined copy policy is assigned to a particular data set and where it is compared to copy function attributes to select a best fit copy function.

Therefore, Applicants submit that Claim 38 is allowable over the prior art of record and request that the rejection of Claim 38 be withdrawn. Should the rejection of Claim 38 be maintained in a future action, Applicants respectfully request a detailed explanation of where each element of Claim 38 is found in the prior art, and in particular the limitations previously recited in Claims 41-44, so that Applicants can adequately respond to the rejection.

REJECTION OF CLAIMS 3, 11, 19, AND 27 UNDER 35 U.S.C. §103(a)

The Office Action rejected Claims 3, 11, 19, and 27 under 35 U.S.C. § 103(a) as being unpatentable over Yanaka in view of Yamagami. The Applicants respectfully traverse this rejection. The Applicants respectfully assert that Claims 1, 9, 17, and 25 are in condition for allowance as depending from allowable Claims 1, 9, 17, and 25. Applicants again note that Claims 41-44 also rejected under § 103 have been canceled and the subject matter has been incorporated into Claim 38.

REMARKS

In view of the amendments and remarks included herein, Applicants submit that Claims 1-32 and 38-39 are in condition for prompt allowance.

Should additional information be required, the Examiner is respectfully asked to notify the Applicants of such need. If any impediments to the prompt allowance of the claims can be resolved by a telephone conversation, the Examiner is respectfully requested to contact the undersigned.

Respectfully submitted,

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